

Claims

1. A fluid bag (10) comprising one or more compartments (12, 13) suitable for containing one or more fluids, the fluid bag (10) containing, in at least one compartment (12), or in a combination of different compartments (12, 13), either a dialysis fluid, suitable for use as a dialysis fluid in an apparatus (42) for hemodialysis, hemodiafiltration, hemofiltration or peritoneal dialysis, or a replacement fluid, suitable to be delivered to a patient in order to replace the ultrafiltrate that is withdrawn from a patient by a process of hemodialysis, hemofiltration, hemodiafiltration or peritoneal dialysis, or a fluid that is a rest product from a process of hemodialysis, hemofiltration, hemodiafiltration or peritoneal dialysis, the fluid bag (10) being at least partly made of a flexible material and comprises a first main sheet (14) and a second main sheet (16) located opposite to said first main sheet (14), the distance between said first (14) and second (16) sheets defining the thickness (t) of the fluid bag (10), the fluid bag (10) having a size such that it contains at least a certain quantity q ml of fluid when it is completely filled with one or more fluids, the fluid bag (10) being arranged such that the thickness (t) of the fluid bag (10), when the fluid bag (10) is suspended such that it hangs vertically, never exceeds a certain value v mm independently of whether the fluid bag (10) is completely full, completely empty or filled to any degree there between, wherein:  
 $q \geq 2000$ , and  
 $v \leq 2q/100$ .
2. A fluid bag (10) according to claim 1, wherein  $v \leq 0.0175 q$ .
3. A fluid bag (10) according to claim 2, wherein  $v \leq 0.016 q$ .
4. A fluid bag (10) according to any of the preceding claims, wherein  $q \geq 3000$ .
5. A fluid bag (10) according to claims 4, wherein  $q \geq 4000$ .

6. A fluid bag (10) according to any of the preceding claims, wherein the fluid bag (10) is provided with one or more distance limiting members (40), arranged to limit the distance between said first (14) and second (16) sheets.

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7. A fluid bag (10) according to claim 6, wherein the extension of said first sheet (14) is limited by a first boundary (18, 20, 22, 24) of said first sheet (14), and wherein the extension of said second sheet is limited by a second boundary (18, 20, 22, 24) of said second sheet (16) and wherein at least one such distance limiting member (40) is formed by fastening said first sheet (14) to said second sheet (16) at a position located at least at a distance from said first and second boundaries (18, 20, 22, 24), and, if the bag includes a plurality of compartments (12, 13), at a distance from the borderlines (34) between the different compartments (12, 13).

8. A fluid bag (10) according to claim 6 or 7, wherein said at least one distance limiting member (40) is formed by a weld joining said first (14) and second (16) sheets.

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9. A fluid bag (10) according to claim 8, wherein said weld (40) has the shape of a substantially straight line.

10. A fluid bag (10) according to claim 8, wherein said weld (40) has the shape of a loop.

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11. A fluid bag (10) according to any of the claims 6-10, wherein the fluid bag (10) includes a plurality of said distance limiting members (40).

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12. A fluid bag (10) according to claim 11, wherein the fluid bag (10) includes at least three distance limiting members (40).

13. A fluid bag (10) according to any of the preceding claims, including at least two compartments (12, 13).

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14. A fluid bag (10) according to claim 13 in combination with claim 11 or 12, wherein each of at least two compartments (12, 13) is provided with at least one distance limiting member (40).

5 15. A fluid bag (10) according to any of the preceding claims, wherein the fluid bag (10) has a first edge portion (18), and wherein the fluid bag (10) is provided with attachment means (30), located at said first edge portion (18), for attaching the fluid bag (10) to holding means (44), suitable to hold the fluid bag (10) in a suspended position.  
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16. A fluid bag (10) according to claim 15, wherein said attachment means (30) are formed by at least one hole (30) through said first edge portion (18).  
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17. Use of a fluid bag (10) according to any of the preceding claims, wherein said fluid bag (10) is connected, via a conduit (48, 50, 52), to an apparatus (42) for hemodialysis, hemodiafiltration, hemofiltration or peritoneal dialysis.  
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18. Use according to claim 17, wherein the fluid bag (10) is suspended by holding means (44) such that the fluid bag (10) hangs down from said holding means (44).

25 19. Use according to claim 18, wherein said fluid bag (10) is a fluid bag (10) according to claim 16, and wherein said holding means (44) holds the fluid bag (10) by a holding member (46) protruding through said hole (30).

30 20. Use of a plurality of fluid bags (10), each fluid bag (10) being in accordance with any of the claims 1-16, wherein each fluid bag (10) is suspended by holding means (44), such that each fluid bag (10) hangs down from said holding means (44), and wherein said holding means (44) forms part of or is arranged in proximity to an  
35 apparatus (42) for hemodialysis, hemodiafiltration, hemofiltration or peritoneal dialysis.

21. Use according to claim 20, wherein said fluid bags (10) are arranged suspended from said holding means (44) such that the fluid bags (10) are arranged after each other as seen in the thickness direction of the fluid bags (10).

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22. Use according to claim 21, wherein each fluid (10) bag is attached to said holding means (44) at a certain position at said holding means (44), and wherein the distance  $d$  mm between the positions for neighbouring fluid bags (10) is such that  $d \geq v$ .

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23. Use according to claim 22, wherein  $v < d < 1.5 v$ .

24. Use according to claim 23, wherein  $v < d < 1.2 v$ .

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25. Use according to any of the claims 20-24, wherein each of said fluid bags (10) is a fluid bag (10) according to claim 16, and wherein for each fluid bag (10), said holding means (44) holds the fluid bag (10) by a holding member (46) protruding through said hole (30).

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26. Use according to any of the claims 20-25, wherein the number of fluid bags (10) is at least three.

27. Use according to any of the claims 20-26, wherein at least one of said fluid bags (10) is connected, via a conduit (48, 50, 52), to said apparatus (42) for hemodialysis, hemodiafiltration, hemofiltration or peritoneal dialysis.

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28. A system for hemodialysis, hemodiafiltration, hemofiltration or peritoneal dialysis, the system comprising an apparatus (42) for hemodialysis, hemodiafiltration, hemofiltration or peritoneal dialysis and at least one fluid bag (10) according to any of the claims 1-16.

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29. A system according to claim 28, comprising holding means (44) that forms part of or is arranged in proximity to said apparatus (42) for hemodialysis, hemodiafiltration, hemofiltration or peritoneal dialysis, wherein said fluid bag (10) is suspended by said holding

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means (44), such that the fluid bag (10) hangs down from said holding means (44).

- 5 30. A system according to claim 29, comprising a plurality of fluid bags (10), each fluid bag (10) being in accordance with any of the claims 1-16, wherein each fluid bag (10) is suspended by said holding means (44), such that each fluid bag (10) hangs down from said holding means (44).
- 10 31. A system according to claim 30, wherein said fluid bags (10) are arranged suspended from said holding means (44) such that the fluid bags (10) are arranged after each other as seen in the thickness direction of the fluid bags (10).
- 15 32. A system according to claim 31, wherein each fluid bag (10) is attached to said holding means (44) at a certain position at said holding means (44), and wherein the distance  $d$  mm between the positions for neighbouring fluid bags (10) is such that  $d \geq v$ .
- 20 33. A system according to claim 32, wherein  $v < d < 1.5 v$ .
34. A system according to claim 33, wherein  $v < d < 1.2 v$ .
- 25 35. A system according to any of the claims 30-34, wherein said holding means (44) includes a plurality of holding members (46) arranged to hold the fluid bags (10) suspended from said holding members (46)...
- 30 36. A system according to claim 35, wherein each of said fluid bags (10) is a fluid bag (10) according to claim 16, and wherein for each fluid bag (10), said holding means (44) holds the fluid bag (10) by a holding member (46) protruding through said hole (30).
- 35 37. A system according to any of the claims 30-36, wherein the number of fluid bags (10) is at least three.

38. A system according to any of the claims 28-37, wherein at least one such fluid bag (10) is connected, via a conduit (48, 50, 52), to said apparatus (42) for hemodialysis, hemodiafiltration, hemofiltration or peritoneal dialysis.